

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM



Page 1

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube RH

Start Date: 4/5/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

11-04-15

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

IIN-D350-636

H

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-012 CHG 006

8 e10616

Handwritten signature and date: 11-6-16

68034

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM



Page 2

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Item Name: Skidtube RH

Stop



Start Date: 4/5/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-2 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail K)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail L to 0.500" (8 holes per side)

9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

PD 11/05/17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM

Page 3

Item ID: D350-636-012

Accept

Revision ID:

Item Name: Skidtube RH

Start Date: 4/5/2011 Start Qty: 1.00

Required Date: 4/25/2011 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left
from bending as per QSI 004A/R Aluminum Rod batch: ☐

12-Grind welds flush as per Dwg D2750

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

BE 11/05/19
BB 11/05/19

S 11/05/19

S 11/05/19

(40)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM

Page 4

Item ID: D350-636-012

Accept

Setup Start

Revision ID:

Stop

Item Name: Skidtube RH

Start Date: 4/5/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00

Customer:



Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140  HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00				1		28	4/05/30
150  QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							11-5-31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM



Page 5

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Item Name: Skidtube RH

Stop



Start Date: 4/5/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail L and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.

2-Open up holes of Detail K to 0.750" (total of 4 holes per side) as per dwg D2750.

3-Open float holes to .500" (4 per Side)

4-Chamfer holes of Detail K, L, ground handling and float holes per dwg D2750 (welding instructions on sheet 9)

5-Deburr and blow out all chips from inside of tube

6-Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI015

A/R ☐ Sikaflex-291batch: 116845 ☐ ☐

exp. date: 12/01/15

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 9)

A/R ☐ Aluminum Rod

batch: m117456

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

11-Spot face ground handling holes section (total of 4 places per side) as per

DH 11/05/31

BB

11/08/31

BF 11/06/06

BB 11/06/06

BB 11/06/07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM



Page 6

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube RH

Start Date: 4/5/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____



Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	dwg D2750								
	12-Debur holes								
170	QC10- Inspect visual per QSI004- ground welds	0.00							
									
QC	Memo	0.00							
Quality Control									
180	QC5- Inspect part completeness to step on W/O	0.00							
									
QC	Memo	0.00							
Quality Control									

JB

11/06/07

Sub6608

Sub6608

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM

Page 7

Item ID: D350-636-012

Accept

Setup Start

Revision ID:

Stop

Item Name: Skidtube RH

Start Date: 4/5/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

IX ϕ M. 11/06/14

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

1:10
320 OF
1:40IX ϕ M. 11/06/14

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

1 - BL 11-6-15.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM



Page 8

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube RH

Start Date: 4/5/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

Install inserts as per dwg D2750

1 BR 11-6-15.

230

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3"
batch: _____3-Install blade fitting D3488-042, wearshoes and ground handling hardware as
per dwg D2750

SIKA FLEX 241

BATCH: 117516
EXP DATE: 01-154-assemble o-ring to plug as per dwg D3492 and apply o-ring lube
A/R 55-o-ring lube batch: 1141895-Coat all exposed fasteners with "LPS Procyon"
batch: 114596

1 BR 11-6-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68034

Tuesday, April 05, 2011 2:20:19 PM



Page 9

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube RH

Start Date: 4/5/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8 w/o 1/10

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

11/4/10 SP

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

8 w/o 1/10

FD

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 05, 2011 2:20:27 PM

Page 1

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH



Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
IPP Rev: J 06-03-29 As per Rev D EC
IPP Rev: K 06-07.13 As per dsi9343 EC
IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC
IPP Rev: M 08-04-22 update steps 4,13 DD verified by: EC
IPP Rev: N 08-09-23 revF as per dwg DD verified by: ec IPP Rev: O
10.06.22 revise seq 110 DD verf: EC IPP Rev: P 10.10.01 as per
IIN revH DD verf: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS4-1032-225		Purchased	No			220	Each	1,229.000	38	38			



Insert

Location	Loc Qty	Loc Code
FP-B 117717	148	
110768	148	
ST282	1081	
110768	1081	

38. BR 11-6-15.

AN3CSA

Purchased

No

230

Each

687.0000

34

34



Bolt

Location	Loc Qty	Loc Code
FP-A 117588	7	
115835	7	
ST350	680	
108302	28	
115422	100	
116419	452	
116549	100	

34. BR 11-6-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 2

Tuesday, April 05, 2011 2:20:28 PM

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C6A Purchased No 230 Each 272.0000 4 4



BOLT

Location	Loc Qty	Loc Code
FP-A 117514.	41	
111982	41	
ST351	231	
111982	6	
116419	75	
116549	50	
116704	100	

4 BK 11-6-15

AN6C44A Purchased No 230 Each 46.0000 4 4



BOLT

Location	Loc Qty	Loc Code
FG 117407	2	
103964	2	
ST344	44	
116874	44	

4 BK 11-6-15

AN8C35A Purchased No 230 Each 42.0000 1 1



BOLT

Location	Loc Qty	Loc Code
FP-A	42	
115188	1	
115960	18	
116874	23	

1 BK 11-6-5.

AN960C10L NAS1149C0332 R Purchased No 230 Each 0.0000 38 38



washer

117291

38 BK 11-6-5.

Tuesday, April 05, 2011 2:20:28 PM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 05, 2011, 2:20:28 PM

Page 3

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH



Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

AN960C816L



WASHER

D2745



Bushing

Purchased No 230 Each 0.0000 1 1

MAS1149C0832R 114915



1

BR 11-6-15

Manufactured No 230 Each 48.0000 8 8



8

Location

Loc Qty

Loc Code

FP-A

68248

7

63315

7

ST021

41

63315

41

Manufactured No 230 Each 17.0000 1 1



1

BR 11-6-15

D3488-042



Blade Fitting Assembly, RH

Location

Loc Qty

Loc Code

FP008

59643

17

62003

8

65099

8

Manufactured No 230 Each 140.0000 8 8



8

BR 11-6-15

D3492-041



Plug Assembly

Location

Loc Qty

Loc Code

FP-B

69819

140

63994

4

65068

20

66937

116

8. BR 11-6-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 05, 2011 2:20:28 PM

Page 4

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D3492-043

Manufactured No

230 Each

67.0000 8 8



Plug Assembly

Location

Loc Qty

Loc Code

FP-B

68508

67

66150

8

66931

59

8 BL 11-6-15.

D3535-25

Manufactured No

230 Each

11.0000 1 1



Wearshoe

Location

Loc Qty

Loc Code

FP018

68353

11

62233

1

65167

10

1 BL 11-6-15.

D3536-25

Manufactured No

230 Each

14.0000 1 1



Gasket

Location

Loc Qty

Loc Code

FP012

68351

14

64446

2

65903

12

1 BL 11-6-15.

D3537-1

Manufactured No

230 Each

24.0000 3 3



Wearpad

Location

Loc Qty

Loc Code

FP017

69817

24

63313

2

65927

22

3 BL 11-6-15.

Tuesday, April 05, 2011 2:20:29 PM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 05, 2011 2:20:29 PM

Page 5

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D3631-1

Manufactured No

230 Each

100.0000

8 8



Washer

Location

Loc Qty

Loc Code

ST072

68062

100

66959

100

230 Each

1,387.000

8 8

D3672-1

Manufactured No



Phenolic Washer

Location

Loc Qty

Loc Code

FP-A

37

52505

37

ST074

64177 ✓

1350

66821

850

230 Each

10.0000

1 1

D3791-1

Manufactured No



Wearplate

Location

Loc Qty

Loc Code

FP017

68352

10

62239

10

230 Each

17.0000

1 1

D3793-1

Manufactured No



Wearshoe

Location

Loc Qty

Loc Code

FP018

17

61710 ✓

3

64445 ✓

14

8 BL 11-6-15

8 4

1 BL 11-6-15

1 BL 11-6-15

1 BL 11-6-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 05, 2011 2:20:29 PM

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D3793-3 Manufactured No

230 Each

12.0000

1

1



Wearshoe



Location

Loc Qty

Loc Code

FP019

68356

12

61711

1

64447

11

1 BL 11-6-15

D3794-1 Manufactured No

230 Each

9.0000

1

1



Gasket



Location

Loc Qty

Loc Code

FP010

68355

9

39279

1

39421

1

61704

7

1 BL 11-6-15

D3794-3 Manufactured No

230 Each

11.0000

1

1



Gasket



Location

Loc Qty

Loc Code

FP018

68357

11

39422

1

61712

10

1 BL 11-6-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 05, 2011 2:20:29 PM

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

MS21043-6

Purchased

No

230

Each

575.0000

4

4



NUT

Location

Loc Qty

Loc Code

FG

20

103693

20

FP-A

80

112314 ✓

80

ST301

475

112314

475

4 BL 11-6-15.

MS21083C8

Purchased

No

230

Each

81.0000

1

1



NUT

Location

Loc Qty

Loc Code

FP-B

11

115884

11

ST303

70

115884

0

117010

20

117291

50

1 BL 11-6-5

NAS1611-010

Purchased

No

230

Each

194.0000

8

8



O-RING

Location

Loc Qty

Loc Code

FP-A

194

110915

147

115589 ✓

47

8 BL 11-6-15.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 05, 2011 2:20:29 PM

Page 8

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1611-013

Purchased

No

230

Each

192.0000

8

8



O-RING

Location

Loc Qty

Loc Code

FP

117460.
117291

187

187

FP-A

116582

5

5

8. BL 11-6-15.

AN8C21A

Purchased

No

250

Each

56.0000

2

2



BOLT

Location

Loc Qty

Loc Code

ST345

116381

56

56

M117562 SP

AN960JD816

Purchased

No

250

Each

73.0000

2



1/2" washer, Alum

Location

Loc Qty

Loc Code

FP-A

106043

73

73

2

D2741

Manufactured

No

250

Each

66.0000

1



Blade, 350 Skidtube

Location

Loc Qty

Loc Code

ST466

61341

63589

66

26

40

11/6/16 SP

Tuesday, April 05, 2011 2:20:30 PM

Shop Packet Print

Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 9

Tuesday, April 05, 2011 2:20:30 PM

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

61.0000

2



Washer

Location

Loc Qty

Loc Code

ST062

61

62677

21

66975

40

D3532-1

Manufactured No

250

Each

23.0000

2



Spacer

Location

Loc Qty

Loc Code

ST065

23

62218

23

MS21083C8

Purchased No

250

Each

81.0000

2



NUT

Location

Loc Qty

Loc Code

FP-B

11

115884

11

ST303

70

115884

0

117010

20

117291

50

D2600-3-BENT

Manufactured No

110

Each

9.0000

1



Extrusion Bent

Location

Loc Qty

Loc Code

LG

68137

9

66875

9

Tuesday, April 05, 2011 2:20:30 PM

Shop Packet Print

Page 9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 05, 2011 2:20:30 PM

Page 10

Work Order ID: 68034

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 4/5/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D2744

Manufactured No

110 Each

45.0000 1 1



Cap

Location

Loc Qty

Loc Code

LG002

45

62715

16

65086

29

D2739

Manufactured No

160 Each

6.0000 1 1



350 I Beam

Location

Loc Qty

Loc Code

LG

6

66981

6

D2743

Manufactured No

160 Each

17.0000 8 8



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG001

17

64003

17

D3490-3

Manufactured No

160 Each

29.0000 4 4



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG001

29

66968

29

D3490-1

Manufactured No

160 Each

23.0000 4 4



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG001

23

62450

23

Tuesday, April 05, 2011 2:20:30 PM

Shop Packet Print

Page 10

BE 11/05/19

BB 11/05/19

BB 11/06/06
B 68948 -B

BE 11/06/06
B 68106 #4

BE 11/06/06
B 68105 #4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

5

4

3

2

1

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- 1) MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- 8) WELD PER DART QSI 004
- 9) INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- 10) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 11) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 13) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

RELEASED

F	INCORPORATE DSI 9413; QTY (5) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/3 REPLACES D3535-13/35 (ZN C8-1); D3794-1/3 REPLACES D3536-13/35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741; QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.07.16		
DART AEROSPACE USA, INC. PORT HADLOCK, WA			
DRAWING NO. D2750		REV. F SHEET 1 OF 11	
TITLE 350 SKIDTUBE ASSEMBLY		SCALE NTS	
COPYRIGHT © 1998 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			

8

7

6

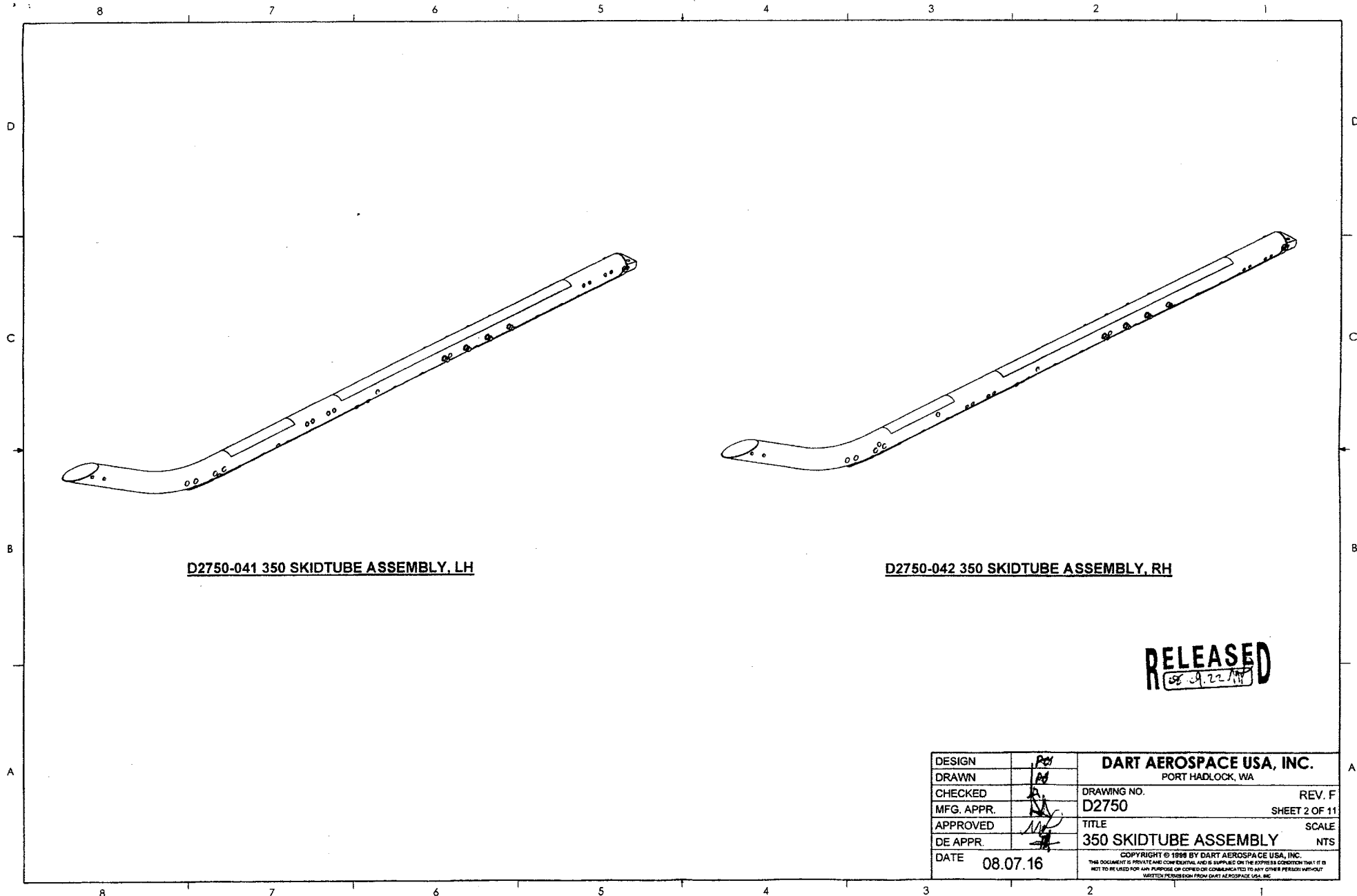
5

4

3

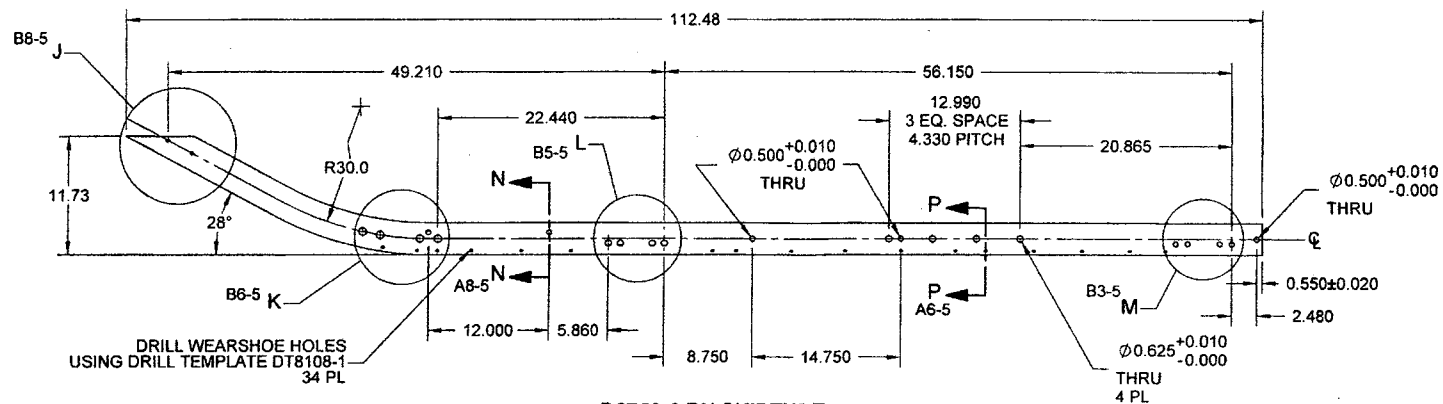
2

1

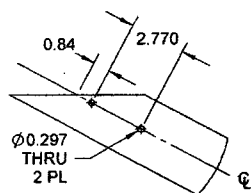


RELEASED
08.07.16

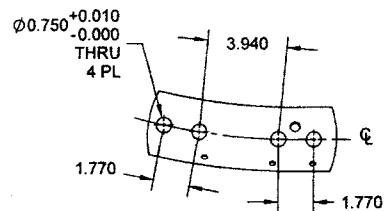
DESIGN	PCY	DART AEROSPACE USA, INC.	
DRAWN	LM	PORT HADLOCK, WA	
CHECKED	SA	DRAWING NO.	REV. F
MFG. APPR.	MM	D2750	SHEET 2 OF 11
APPROVED	MM	TITLE	SCALE
DE APPR.	MM	350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	<small>COPYRIGHT © 1988 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	



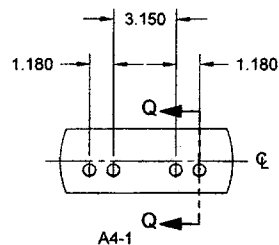
D2750-2 RH SKIDTUBE



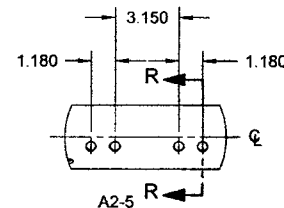
DETAIL J
D8-5
SCALE 2X



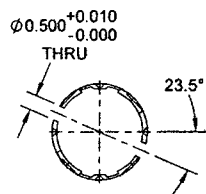
DETAIL K
C7-5
SCALE 2X



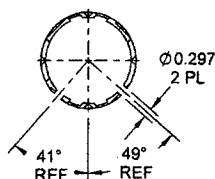
DETAIL L
D6-5
SCALE 2X



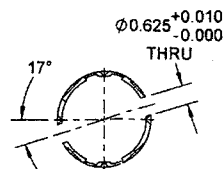
DETAIL M
C3-5
SCALE 2X



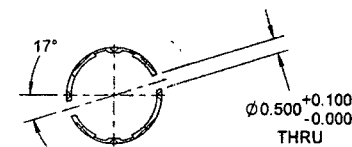
SECTION N-N
C6-5
SCALE 3X, 2 PL



SECTION P-P
C4-5
SCALE 3X, 17 PL



SECTION Q-Q
B5-5
SCALE 3X, 4 PL



SECTION R-R
B3-5
SCALE 3X, 4 PL

RELEASED

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO. D2750	REV. F
MFG. APPR.		TITLE	SHEET 5 OF 11
APPROVED		350 SKIDTUBE ASSEMBLY	SCALE
DE APPR.			NTS
DATE	08.07.16	<small>COPYRIGHT © 1998 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

NO. 254

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: 69872
Part number: A350 636 011
Description: 350
Welding Process: Tig ☒ Mig ☐
Base material: aluminum
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier Pat Lewis Date of Test Coupon 11.06.08
Welder Barclay Elliot Date of Test Coupon 11/06/08

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries